

BEST AVAILABLE COPYRemarksStatus of the Claims

Claims 1, 3-6, and 35-44 are pending in the application. All claims stand rejected. By this paper, claims 1, 3-5, 35-37, 40, and 42-44 have been amended. Reconsideration of all pending claims in view of the amendments and following remarks is respectfully requested.

Claim Objections

Claims 1, 35, and 40 were objected to because the limitation in parenthesis, i.e., "(disk-related Information)", is allegedly not clearly part of the claim. The applicants have rewritten the foregoing claims so as to not parenthetically claim the limitation. The applicants respectfully submit that these amendments also address the Examiner's objections to claims 6, 39, 40, and 44.

In claims 4, 37, and 42, the Examiner objected to the limitation "MD5." The applicants have amended these claims to spell out "Message Digest 5," as suggested by the Examiner.

Claims 5 and 43 was objected to because of a typographical error. The applicants have amended the claim to recite a "hash algorithm" rather than a "has algorithm." Claim 43 was amended to insert "algorithm" after "MD5 hash" in the second line of the claim, as suggested by the Examiner.

Claim 44 was objected to because of a dependency problem. The applicants have amended claim 44 to depend from claim 40 rather than claim 35, as suggested by the Examiner.

BEST AVAILABLE COPY**Claim Rejections**

Claims 1, 6, 35, 39, 40, and 44 were rejected under 35 U.S.C. 102(e) as being anticipated by Jones et al. ("Jones"). Claims 3-4, 36-37, and 41-42 were rejected under 35 U.S.C. 103(a) as being unpatentable over Jones in view of Commons et al. ("Commons"). Claims 5, 38, and 43 were rejected under 35 U.S.C. 103(a) as being unpatentable over Jones in view of Commons and further in view of Gibbs.

Claim 1 has been amended to more particularly point out and distinctly claim the invention. As amended, claim 1 recites:

reading one or more track offsets from a disk;

hashing said offsets into an identification code without reference to track length; and

performing a database lookup using said identification code to identify disk-related information associated with said disk in said database.

The claimed invention provides a mechanism for identifying CDs, DVDs, or other similar disks, that is less likely to result in duplicate identifiers than in conventional approaches. In their background section, the applicants refer to Scherf, which discloses a CD identifier that is directly based on a "combination of the number of tracks on the CD and the lengths of each track." Application at pages 2-3 (emphasis added). For example, a "concatenation of the lengths of each track may be used to generate a "hexcode" for each CD." *Id.*

The problem with Scherf and its variations that rely on track length is the creation of numerous duplicate CD identification codes and, in some cases, multiple identification codes for the same CD. For example, an analysis of the "Free DB" CD

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database, which uses hexcodes to identify CDs, reveals 37,814 records having the same hexcode ID and 13,922 CDs having two or more ID mappings out of 364,477 total records.

By contrast, the claimed invention does not rely on track length, but, instead, generates a hash from the track offsets in the disk's table-of-contents. The track offsets are dictated by the track lengths because of the many ways in which disk mastering may affect the track offsets. For example, the pregap on a Red Book audio CD is often 2 seconds long, but this is not a requirement. Two disks with similar track lengths may have markedly different offset values based on the length of the pregap. These different offset values may distinguish between two discs with identical track lengths, that would otherwise be indistinguishable by Scherf and the like.

Likewise, a gap between tracks may or may not exist, which affects track offsets but not track lengths. For example, audio CDs are often mastered so that one audio track seamlessly transitions to the next audio track with no gap of silence between the two. This is often the case with classical music. Accordingly, track offsets, as used in the claimed invention, are not the same as track lengths, as used in Scherf and the like.

Jones is merely a variation of Scherf. Referring to CDDb, which is similar to the "Free DB" CD database mentioned in the applicants' background, Jones explains the process of creating a disc ID:

A typical disc ID is composed of four bytes, to calculate the first byte of the disc ID, the offsets are converted to seconds and the offset to the beginning of the first track is incremented by two seconds, representing a lead-in time. The digits of the offsets (plus lead-in time for the first track) in seconds are

summed for the first byte. The second and third bytes of the disc ID are the entire running time in seconds which is the sum of the offset to the last track plus the playing time of the last track. The last byte of the disc ID is the number of tracks on the CD.

Col. 5, lines 34-43 (emphasis added). As shown in the italicized portions, Jones uses the running time (total length) of all of the tracks and the playing time (length) of the last track, contrary to the claimed limitation of "hashing said offsets into an identification code without reference to track length." Indeed, Jones teaches away from this limitation. Thus, Jones is subject to all of the problems of duplicate identifiers found in conventional approaches.

Additionally, the Examiner apparently agrees that Jones "does not expressly disclose a 'hash' algorithm." Office Action at page 5. Accordingly, Jones does not satisfy the step in amended claim 5 of "hashing said offsets into an identification code." The addition of Commons, however, does not cure the deficiencies of Jones.

Commons is essentially identical to Jones but applied to DVDs rather than CDs. Like Jones, Commons uses running time ("number of frames per title"), track length ("number of frames per chapter"), number of chapters per title, etc., to generate a disc ID ("first identifying key"). See, e.g., claims 1 and 4 of Commons. A video "chapter" in a DVD is basically the same as an audio CD "track." The number of frames in the "chapter" is an indication of length, unlike the claimed "track offsets." Thus, Commons also teaches away from the claimed limitation of "hashing said offsets into an identification code without reference to track length."

In any case, neither reference teaches or suggests applying a hash algorithm to offsets (i.e., "hashing said offsets."). Jones does not. Jones generates a disc ID based on the lengths of tracks, the number of tracks, etc. Track length is not the

same as a track offset, as discussed above, because it ignores data inserted during the disk mastering process that affects offsets, such as pregaps, gaps between tracks, etc. Commons also does not hash track or chapter offsets. Commons applies his algorithm to the number of frames per title, the number of frames per chapter, the number of chapters per title, etc., none of which are equivalent to a track offset.

A rejection based on prior art – whether grounded in anticipation or obviousness – must account for each and every claim limitation. *Celeritas Techs. Inc. v. Rockwell Int'l Corp.*, 150 F.3d 1354, 1360, 47 U.S.P.Q.2d 1516, 1522 (Fed. Cir. 1998) (anticipation); *In re Wilson*, 424 F.2d 1382, 1385, 165 U.S.P.Q.2d 494, 496 (CCPA 1970) (obviousness); MPEP § 2143.03 (“To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.”) (emphasis added). Because the cited references do not teach or suggest hashing track offsets to generate an identification code for a disk, the applicants respectfully submit that the claim 1 is not anticipated by Jones and that a *prima facie* case of obviousness with Jones and Commons has not been established. Claims 1, 35, and 40 and have been amended to include similar limitations and are likewise believed to be patentably distinct. All other claims depend directly or indirectly from one of the foregoing claims and are likewise believed to be allowable by virtue of that dependency.

Conclusion

In view of the foregoing, all claims are believed to be in condition for allowance. Early allowance of all pending claims herein is respectfully requested. If any issues remain, the Examiner is invited to contact the undersigned at the telephone number provided below.

Respectfully submitted,

Digeo, Inc.

By 

Kory D. Christensen
Registration No. 43,548

STOEL RIVES LLP
201 S Main Street, Suite 1200
Salt Lake City, UT 84111-4904
Telephone: (801) 328-3131
Facsimile: (801) 578-6999

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